

CHAPTER 7 – Blood

The Language of Hematology

Chapter 7 Teaching Overview

Blood circulates 24 hours a day, 7 days a week, every day of our lives. Blood cells are born and die every day. Help students understand that blood provides vital nourishment and oxygen to all of their body systems. Students often find it very interesting that blood pressure is an indication of a person's general state of health. Spelling is often an issue with the medical terms in this chapter and in later chapters. Words that contain “rrh” such as hemorrhage, hemorrhagia, amenorrhea, etc., can be difficult for students. Consider giving students extra opportunities to practice spelling the terms in this chapter. Another common stumbling point for students in the study of blood is the difference between “transfusion” and “infusion.” Finally, it is important for students to consider how hemostasis helps promote or bring about homeostasis.

As with all lessons in this Lesson Planning Guide, you can and should modify them to best meet the needs of *your* students, *your* schedule, and *your* curricula.

Teacher to Teacher:

- Every student has a blood pressure, a blood type, etc. When possible, motivate students to learn their own blood pressure and blood type and see how it compares to that of others—in the classroom or even nationally or world-wide.
- Helping students make connections between their own health and lives, and the medical terms associated with blood and hematology, will increase their retention of these medical terms.
- A guest speaker from a local hospital's blood bank, or from the American Red Cross, is a great way to help students learn about the terminology used to discuss blood in a “real life” context.

Chapter 7: Learning Outcomes

Upon successful completion of the lessons in this chapter, your students will . . .

- Apply the language of hematology to the anatomy and physiology of the blood.
- Comprehend, analyze, spell, and write the medical terms of hematology so that they can communicate and document accurately and precisely in any health care setting.
- Recognize and pronounce the medical terms of hematology so that they can communicate verbally with accuracy and precision in any health care setting.
- Explain the effects of common disorders of the blood on health.

Note: These lessons are designed with ultimate flexibility in mind. When customizing the lessons for your own class, always choose activities that are most relevant to your curriculum, your students, and your teaching goals—especially if you do not have time to implement all of the provided activities into your class period.

Lesson 7.1: Components of Blood



Total Time:
50 Minutes

Lesson 7.1 Learning Objectives:

Your teaching objective for this lesson is to help your students accomplish these learning objectives:

1. Identify the components of blood.
2. Describe plasma and its functions.
3. Explain the functions of blood.

Prepare Your Materials:

Colored sand (red, white, tan, and yellow) – See activity below to determine how much you will need

Clear glass jars or drinking glasses

Funnels

- **Lesson 7.1 PowerPoint® presentation** – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e

in Lesson 7.1

Lesson 7.1 Student Note-taking Handout – Create by selecting the “Handouts” option when printing the PowerPoint presentation; select 3 slides per page to print slides with blank lines to the right where students can take notes

10 to 15 questions on Lesson 7.1 – Create using McGraw-Hill CONNECT (found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e); select questions from Lessons 7.1





Balloon

Instructor Lesson Plan: Chapter 7, Lesson 7.1





Instructor Lesson Plan

Date: _____





Chapter 7—Lesson 7.1

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Warm-up & Introduction	10 min	<p>Step 1: Share with students the following interesting facts about blood:</p> <ul style="list-style-type: none"> • The average adult has 10 to 12 pints of blood in his or her body. • 7% of a person's body weight comes from his or her blood. • It takes about 20 seconds for a red blood cell to circle the whole body. • About 8 million blood cells die in the human body every second, and the same number are born each second. <p>Step 2: Ask students if they know what the four main components of blood are (red blood cells, white blood cells, platelets, and plasma). Emphasize that the RBCs, the WBCs, and platelets are the “formed elements” because they are cells, and that plasma is the liquid transport vehicle.</p> <p>Step 3: Tell students they will “make” blood using its four components: red blood cells, white blood cells, platelets, and plasma.</p> <p>Step 4: Arrange students into groups or partners and give each group a clear glass jar or drinking glass and a funnel. Tell students that in a drop of blood the size of the head of a pin, there are 5 million red blood cells, 10 thousand white cells, and 250,000 platelets. The ratio of red blood cells to white blood cells is approximately 600 or 700 to 1.</p> <p>Step 5: Write the following percentages on the dry erase board:</p> <ul style="list-style-type: none"> • Red blood cells (erythrocytes): 44% • White blood cells (leukocytes): 1/2 % • Platelets (thrombocytes): 1/2% • Plasma: 55% <p>Tell students that these blood composition percentages are approximate; review which make up the formed elements of the blood.</p> <p>Step 6: Tell students which colors of sand represent each of the four blood components. (Red = red blood cells; tan = plasma; white = white blood cells; yellow = platelets)</p> <p>Step 7: Instruct students to layer the four colors of sand in correct proportion in their condiment</p>	Bags of colored sand: red, white, tan, and yellow Dry erase board	LO 1 LO 2

Instructor Lesson Plan: Chapter 7, Lesson 7.1

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
		<p>cups to “create” blood in the glass or jar.</p> <p>Step 8: Once students have gotten the proportions correct, they can mix up the layers to “make” blood.</p>		
Lecture	20 min	<p>Lesson 7.1 Lecture/Discussion</p> <p>Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View,” then “Notes Page”).</p>	Lesson 7.1 PowerPoint Presentation	LO 1 LO 2 LO 3
Active Learning & Practice	15 min	<p>Activity Description: Students will create “job descriptions” for each component of the blood, and the blood as a whole.</p> <p>Step 1: Have students work as individuals or in pairs. Assign each student one of the following topics: blood or plasma.</p> <p>Step 2: Tell students they are to assume the role of a Human Body Resources Manager. It is their job to hire blood and plasma for their bodies.</p> <p>Step 3: Each student or group will need to write a thorough job description for their assigned topic (either blood or plasma.)</p> <p>Step 4: Following are some considerations for students as they complete this activity:</p> <ul style="list-style-type: none"> • What necessary functions are performed by blood or plasma? • What are the desirable characteristics of blood or plasma? • What is a “typical workday” like for blood or plasma? <p>Step 5: When finished, ask students to share their job descriptions.</p>		LO 1 LO 2 LO 3
Review	5 min	<p>Activity Description: Balloon review game</p> <p>Step 1: Toss the beach ball or balloon to a student. If the student catches it, he or she has two chances to answer the question. If he or she drops it, only one chance is given.</p> <p>Step 2: If the student answers correctly, he or she should toss the balloon or beach ball to another student.</p>	Balloon 10 to 15 questions from Lesson 7.1	LO 1 LO 2 LO 3

Instructor Lesson Plan: Chapter 7, Lesson 7.1

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
		<p>Step 3: Ask the next student a question and give him or her the appropriate number of guesses (one if he or she drops it; two if he or she catches it.)</p> <p>Step 3: Continue in this manner until all of the questions have been answered or all students have had a turn. (It is not a bad thing to repeat questions—the reinforcement is good for students.)</p>		
Homework Assignment		<ul style="list-style-type: none"> • Read Lesson 7.2 • Complete the Lesson 7.1 exercises from the textbook 		

Lesson 7.1 Masters

(none)

Lesson 7.2: Red Blood Cells (Erythrocytes)



Total Time:
50 Minutes

Lesson 7.2 Learning Objectives:

Your teaching objective for this lesson is to help your students accomplish these learning objectives:

1. Link the structure of red blood cells to their functions.
2. Identify the roles of hemoglobin in maintaining homeostasis.
3. Describe the life history of red blood cells.
4. Recognize some common disorders of red blood cells.

Prepare Your Materials:

Lesson 7.2 PowerPoint® presentation – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e

in Lesson 7.2

Lesson 7.2 Student Note-taking Handout – Create by selecting the “Handouts” option when printing the PowerPoint presentation; select 3 slides per page to print slides with blank lines to the right where students can take notes

Lesson 7.2 Red Blood Cell Handout – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e





in Lesson 7.2

Instructor Lesson Plan: Chapter 7, Lesson 7.2





Instructor Lesson Plan

Date: _____

Chapter 7—Lesson 7.2

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Warm-up & Review	10 min	<p>Activity Description: Check over answers to Lesson 7.1 textbook exercises.</p> <p>Step 1: Students were to complete the Lesson 7.1 exercises as homework. Have them check their own answers or trade with another student.</p> <p>Step 2: Go over the correct answers with students and make sure everyone understands them. Emphasize correct pronunciation of all of the terms.</p>	Textbook – Lesson 7.1 exercises	(Review Lesson 7.1 concepts)
Introduction	5 min	<p>Step 1: Review with students some of the statistics associated with red blood cells that were discussed in the previous lesson:</p> <ul style="list-style-type: none"> • Red Blood Cells (RBCs) are 40 to 54% of the total blood volume in males and 38 to 47% in females • The formed elements of the blood (the part packed into the bottom of the tube when centrifuged) consists of 99% red blood cells. <p>Step 2: Preview some of the interesting facts from the beginning of Lesson 7.2:</p> <ul style="list-style-type: none"> • 25 trillion RBCs are in your bloodstream right now • 2.5 million of the RBCs are being destroyed every second. • 1% of RBCs are destroyed and replaced every day <p>Step 3: Emphasize the importance of students' understanding terminology related to the structure, function, and disorders of red blood cells.</p>		LO 1
Lecture	20 min	<p>Lesson 7.2 Lecture/Discussion Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View,” then “Notes Page”).</p>	Lesson 7.2 PowerPoint Presentation	LO 1 LO 2 LO 3 LO 4
Active	10 min	Activity Description:	Lesson 7.2 Red	LO 3

Instructor Lesson Plan: Chapter 7, Lesson 7.2

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Learning & Practice		<p>Students will map out a “timeline” depicting the life cycle of a red blood cell.</p> <p>Step 1: Organize students into pairs or small groups.</p> <p>Step 2: Read over the instructions with students and have them complete the Lesson 7.2 handout.</p> <p>Step 3: When students are finished, have them share their timelines with the rest of the class.</p>	Blood Cell Timeline Handout	
Review	5 min	<p>Activity Description: Review exercises</p> <p>Step 1: As a large group, go through the Lesson 7.2 exercises in the textbook.</p> <p>Step 2: As students are reading their answers aloud, pay attention to their pronunciation and reinforce the correct pronunciation. Any exercises that are not completed in class may be assigned as homework.</p>	Textbook – Lesson 7.2 exercises	LO 1 LO 2 LO 3 LO 4
Homework Assignment		<ul style="list-style-type: none"> • Read Lesson 7.3. • Instruct students to review the terms in the Word Analysis and Definition Tables from Lessons 7.1 and 7.2 and practice pronouncing them correctly 		

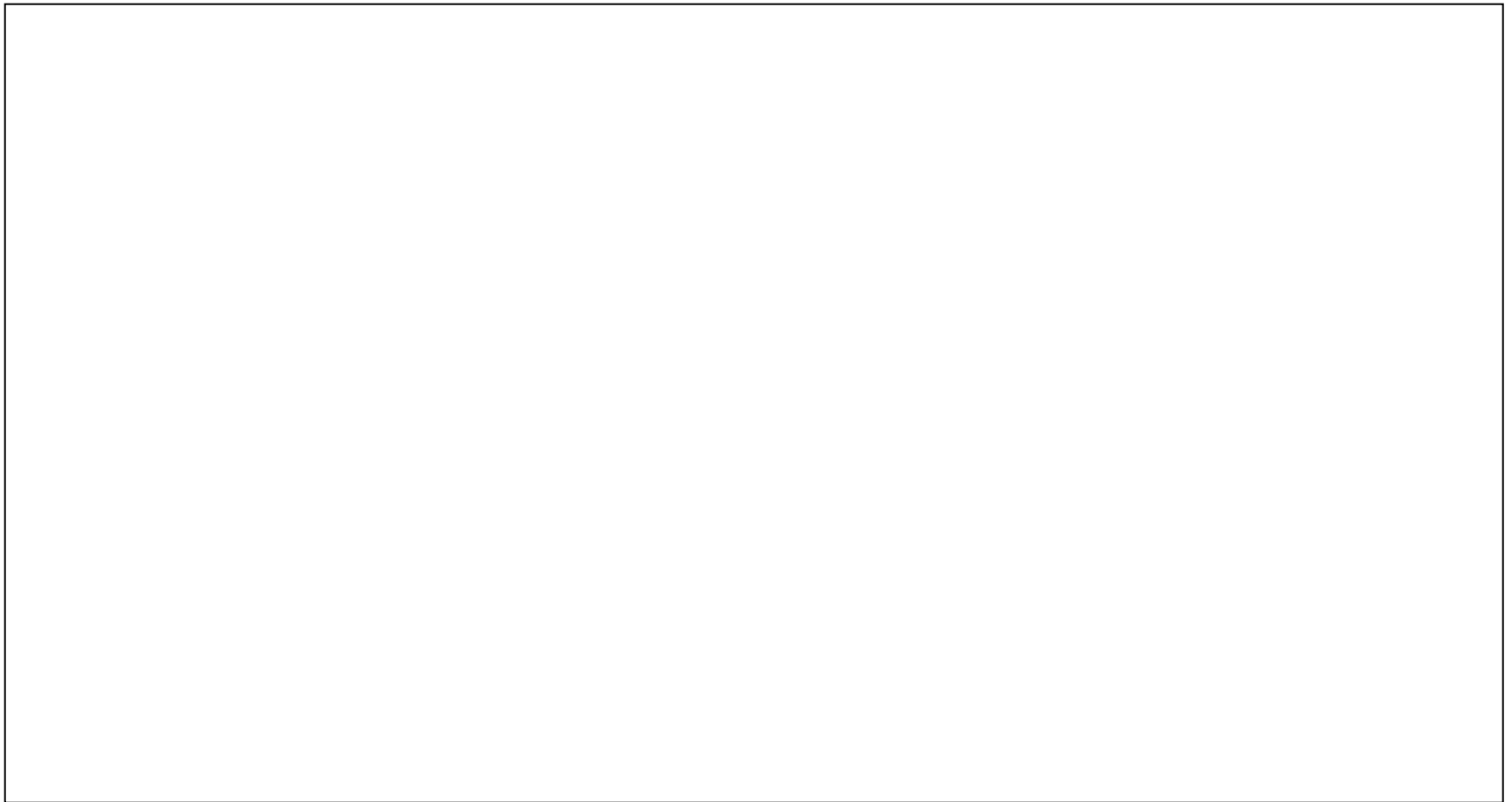
Lesson 7.2 Masters

- Lesson 7.2 Red Blood Cell Timeline Handout

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Lesson 7.1 – Red Blood Cells (Erythrocytes)

Directions: Use the space below to create a visual timeline that represents the lifecycle of a red blood cell. Map out where the blood cell is created, where it travels, and what happens to it along the way. Use words and pictures to make your timeline visual and informative.

A large, empty rectangular box with a thin black border, intended for students to draw a visual timeline of a red blood cell's lifecycle. The box is positioned below the directions and above the footer.

Lesson 7.3: White Blood Cells (Leukocytes)



Total Time:
50 Minutes

Lesson 7.3 Learning Objectives:

Your teaching objective for this lesson is to help your students accomplish these learning objectives:

1. Distinguish the different types of white blood cells.
2. Explain the functions of the different types of white blood cells.
3. Describe white blood cell counts and differential white blood cell counts.
4. Describe the effect of common disorders of white blood cells on health.





Prepare Your Materials:

- **20 to 25 questions from Lessons 7.1 and 7.2** (use McGraw-Hill CONNECT, found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e, to generate)
- **20 Hit Cards** – Create using index cards; on one side of each card, write the following:
 - On seven Hit Cards, write *single*
 - On six Hit Cards, write *double*
 - On four Hit Cards, write *triple*
 - On three Hit Cards, write *home run*
- **4 baseball bases made from construction paper (first base, second base, third base, and home plate)**
- **Basket or small bucket**
- **Lesson 7.3 PowerPoint® presentation** – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e
in Lesson 7.3
- **Lesson 7.3 Student Note-taking Handout** – Create by selecting the “Handouts” option when printing the PowerPoint presentation; select 3 slides per page to print slides with blank lines to the right where students can take notes
- **Drawing paper**
- **Markers**





Instructor Lesson Plan: Chapter 7, Lesson 7.3

Instructor Lesson Plan Chapter 7—Lesson 7.3





Date: _____

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Warm-up & Review	10 min	<p>Activity Description: “Baseball” game to review Red Blood Cells.</p> <p>Step 1: Divide the class into two “teams.” Ask each team to think of a name for their team.</p> <p>Step 2: While they are coming up with team names, place the four baseball bases in a diamond pattern on the classroom floor (you may need to move desks out of the way). Tape down the bases if the floor surface is slippery. Place a bucket or basket containing all of the Hit Cards, face down, on home plate.</p> <p>Step 3: One team will be “up to bat” first. The team should stand and line up behind home plate (the other team can remain seated.)</p> <p>Step 4: Ask the first “batter” in line a question from Lesson 7.1/7.2. If the batter answers correctly, he or she can take a Hit Card from the basket and go to the appropriate base(s). If the batter cannot answer the question, he or she gets an “out” and goes to the end of the line.</p> <p>Step 5: After three “outs,” or after five batters have gotten hits (just to ensure both teams get to answer questions), the batting team should have a seat and the other team lines up to bat. Play continues in this manner until all questions are answered or all students have had a chance to bat.</p>	<p>20-25 questions from Lessons 7.1 and 7.2</p> <p>20 Hit Cards</p> <p>4 baseball bases</p>	(Review Lessons 7.1 and 7.2 concepts)
Introduction	5 min	<p>Activity Description: Introduction to the function of white blood cells.</p> <p>Step 1: Ask students how they would feel if they woke up in the middle of the night to find uninvited strangers in your home. Responses may include “scared,” “angry,” “confused,” etc.</p>		LO 2

Instructor Lesson Plan: Chapter 7, Lesson 7.3

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
		<p>Step 2: Ask student what they would do if they were in this situation? Responses may include calling the police, asking the strangers to leave, frightening the strangers away, etc. The point is, they would want the strangers OUT of their house.</p> <p>Step 3: Tell them the body often has uninvited strangers, and it is the job of white blood cells to locate and remove these uninvited strangers from the body. White blood cells, or leukocytes, are designed to fight infection and protect the body from foreign particles such as harmful germs and bacteria.</p>		
Lecture	20 min	<p>Lesson 7.3 Lecture/Discussion Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View,” then “Notes Page”).</p>	Lesson 7.3 PowerPoint Presentation	LO 1 LO 2 LO 3 LO 4
Active Learning & Practice	10 min	<p>Activity Description: Students will create cartoons or comic strips that depict types of white blood cells carrying out their function in the body.</p> <p>Step 1: Remind students of the 5 types of white blood cells (neutrophils, eosinophils, basophils, monocytes, and lymphocytes).</p> <p>Step 2: As individuals, or in pairs or small groups, assign each student or group one of the 5 types of white blood cells.</p> <p>Step 3: Instruct students or groups to design a comic strip or cartoon that could teach school-aged children about that type of white blood cell. Following are some guidelines for the cartoons/comic strips:</p> <ul style="list-style-type: none"> • Come up with a “character” and personality for the type of white blood cell (e.g., the WBC should have a name and a distinct personality). As an example, reference the Osmosis Jones WBC character played by Chris Rock in the movie called <i>Osmosis Jones</i> (Warner Bros, 2001). 	Drawing paper Markers	LO 1 LO 2 LO 3 LO 4

Instructor Lesson Plan: Chapter 7, Lesson 7.3

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
		<ul style="list-style-type: none"> Consider ways to communicate the structure and function of the type of cell in the cartoon. Consider ways to address the types of disorders affecting white blood cells in the cartoon. <p>Step 4: Have students use drawing paper and markers to make a “final draft” of the cartoon.</p>		
Review	5 min	<p>Activity Description: Share comic strips/cartoons.</p> <p>Step 1: Have students and/or groups share their comic strips with the rest of the class.</p> <p>Step 2: Encourage groups to explain why they chose to depict their white blood cell as they did—why they chose the type of character and personality, and why they chose the events they did.</p> <p>Step 3: Encourage students to ask questions and offer their comments about the comic strips.</p>		LO 1 LO 2 LO 3 LO 4
Homework Assignment		<ul style="list-style-type: none"> Read Lesson 7.4. Complete the Lesson 7.3 exercises from the textbook 		

Lesson 7.3 Masters

(none)

Lesson 7.4: Hemostasis



Total Time:
50 Minutes

Lesson 7.4 Learning Objectives:

Your teaching objective for this lesson is to help your students accomplish these learning objectives:

1. Identify the function of platelets.
2. Describe the body's mechanisms for controlling bleeding.
3. Describe the methods of producing blood clots.
4. Explain some disorders of blood clotting.

Prepare Your Materials:

10-Question Review Quiz – Create with McGraw-Hill CONNECT (found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e) for use at the beginning of Lesson 7.4.

- **Lesson 7.4 PowerPoint Presentation** – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e

in Lesson 7.4

Lesson 7.4 Student Note-taking Handout – Create by selecting the “Handouts” option when printing the PowerPoint presentation; select 3 slides per page to print slides with blank lines to the right where students can take notes

Lesson 7.4 Sentences Handout – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e





in Lesson 7.4

Instructor Lesson Plan: Chapter 7, Lesson 7.4





Instructor Lesson Plan

Date: _____

Chapter 7—Lesson 7.4

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Warm-up & Review	10 min	<p>Activity Description: Review concepts related to White Blood Cells.</p> <p>Step 1: Pass out the 10-question review quiz (this quiz can also be done orally, simply asking each question and calling upon students for the answers). Consider including a question to reinforce that “thrombocyte” is another name for a platelet.</p> <p>Step 2: Once the quiz (or oral review) is finished, go over the correct answers to be certain students are ready to move on.</p> <p>Note: These questions can also be used to play a fun review-type game with students; small prizes could be awarded to students or teams that answer questions correctly.</p>	10-Question Review Quiz	(Review of Lesson 7.3 concepts)
Introduction	5 min	<p>Step 1: All students will likely have experienced bleeding at one time or another. Ask students what they know about how bleeding stops. Some students may know about basic first aid procedures (direct pressure, etc.), but try to probe their understanding beyond this to see if they know what the human body does to stop bleeding when it occurs.</p> <p>Step 2: Ask students what would happen if a patient’s bleeding could not be stopped (death). Introduce and reinforce the term “hemorrhage.”</p> <p>Step 3: Reiterate the importance of understanding the medical terminology relating to hemostasis (the control of bleeding) and some disorders of blood clotting.</p>		LO 1 LO 2 LO 3 LO 4
Lecture	20 min	<p>Lesson 7.4 Lecture/Discussion Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View,” then “Notes Page”).</p>	Lesson 7.4 PowerPoint Presentation	LO 1 LO 2 LO 3 LO 4

Instructor Lesson Plan: Chapter 7, Lesson 7.4

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Active Learning & Practice	10 min	<p>Step 1: Distribute the Lesson 7.4 Sentences Handout.</p> <p>Step 2: Instruct students to complete this handout as individuals or in pairs.</p> <p>Step 3: Go over the instructions and the first example with students to ensure they know what to do.</p> <p>Step 4: When students have completed the Lesson 7.4 Sentences Handout, have them read their sentences aloud to the rest of the class. Answers may vary, but ensure that students are using the medical terms correctly and providing clear, accurate “patient” definitions.</p>	Lesson 7.4 Sentences Handout	LO 1 LO 2 LO 3 LO 4
Review	5 min	<p>Step 1: As a whole group, go through the Four Lesson 7.4 exercises aloud.</p> <p>Step 2: Discuss incorrect answers with students to ensure understanding. Encourage students to use the Word Analysis and Definition Tables for reference when needed.</p> <p>Step 3: If time is short, any remaining exercises can be assigned as homework.</p>	Textbook – Lesson 7.4 exercises	LO 1 LO 2 LO 3 LO 4
Homework Assignment		<ul style="list-style-type: none"> • Read Lesson 7.5. • Review Word Analysis & Definition Tables from Lessons 7.1 through 7.4. • Complete Lesson 7.4 exercises, if needed. 		

Lesson 7.4 Masters

- Lesson 7.4 Sentences Handout

Sentences Handout: Chapter 7, Lesson 7.4

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Lesson 7.4 – Hemostasis

Directions:

For each medical term listed below, write two sentences:

- (a) The first sentence should be a sentence spoken by a health care professional to another health care professional, using the medical term correctly.
- (b) The second sentence should be an explanation of the medical term (NOT using the term itself), as if you are a health care professional explaining the term to a patient (as if the patient has asked what it means). An example has been done for you below.

1. Coagulation

- (a) **The patient's coagulation problem will be a big concern in her upcoming surgery.**
- (b) **Coagulation is the process by which blood clots are formed; blood clots stop bleeding and enable the healing process.**

2. Coumadin

- (a) _____
- (b) _____

3. Hemorrhage

- (a) _____
- (b) _____

4. Agglutination

- (a) _____
- (b) _____

5. Embolus

- (a) _____
- (b) _____

6. Thrombolytic

- (a) _____
- (b) _____

Lesson 7.5: Blood Groups and Transfusions



Total Time:
50 Minutes

Lesson 7.5 Learning Objectives:

Your teaching objective for this lesson is to help your students accomplish these learning objectives:

1. List the different blood groups.
2. Explain what determines a person's ABO blood type and how this relates to transfusion compatibility.
3. Describe the effect of an incompatibility between mother and fetus in the Rh blood type.

Prepare Your Materials:

Dry Erase Board – or chalkboard, chart paper, etc.

- **Lesson 7.5 PowerPoint® presentation** – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e

in Lesson 7.5

Lesson 7.5 Student Note-taking Handout – Create by selecting the “Handouts” option when printing the PowerPoint presentation; select 3 slides per page to print slides with blank lines to the right where students can take notes





- **Lesson 7.5 Pie Chart Handout** – Found on Instructor Resources, Online Resource Center, www.mhhe.com/allanmedlanguage2e

in Lesson 7.5





Instructor Lesson Plan: Chapter 7, Lesson 7.5

Instructor Lesson Plan Chapter 7—Lesson 7.5

Date: _____

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Warm-up & Review	5 min	<p>Activity Description: Review of Lesson 7.4</p> <p>Step 1: Ask each student to write two test questions on medical terms from Lesson 7.4 on a sheet of paper.</p> <p>Step 2: When they are finished, have them trade papers with another student. They should answer the questions on the other student's paper and then exchange with another student.</p> <p>Step 3: Have students continue exchanging papers until they have answered the questions of at least five different students, and their questions have been answered by at least five different students.</p> <p>Step 4: Clarify any confusion and address any questions when finished.</p>		(Review Lesson 7.4 concepts)
Introduction	5 min	<p>Activity Description: Creating a pie chart representative of the blood types in the classroom.</p> <p>Step 1: Preview for students the four basic types of blood: A, B, AB, and O. Tell students that these types are split into subgroups called Rh type, and that these subgroups are positive and negative (e.g., A+ and A-, B+ and B-, etc.)</p> <p>Step 2: Distribute the Lesson 7.5 Pie Chart handout and go over the statistics at the top.</p> <p>Step 3: Find out, by a show of hands, how many students in the class have each type of blood. Write the number of students that fall into each category/blood type.</p> <p>Step 4: Instruct students to use the Pie Chart to graph the type of blood of students in the class. Help any students who need assistance understanding percentages, etc.</p>	<p>Lesson 7.5 Pie Chart Handout</p> <p>Dry Erase Board</p>	LO 1

Instructor Lesson Plan: Chapter 7, Lesson 7.5

	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	OBJECTIVES 
Lecture	20 min	<p>Lesson 7.5 Lecture/Discussion Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View,” then “Notes Page”).</p>	Lesson 7.5 PowerPoint Presentation	LO 1 LO 2 LO 3
Active Learning & Practice	10 min	<p>Activity Description: Play the Nobel Foundation’s “Blood Typing Game” either as a whole class, on one computer projected onto a large screen, or students can play it as individuals if you are in a computer lab</p> <p>Step 1: Go to the Nobelprize.org, the website of the Nobel Foundation. Click on “Educational Games,” then select the “Nobel Prize in Medicine” tab at the top. Go to the game called “Blood Typing.” (Direct link: http://nobelprize.org/educational_games/medicine/landsteiner/)</p> <p>Step 2: Go over the instructions with students and click “Play” to play the game. Be sure speakers are turned on.</p> <p>In this game, students are asked to blood type patients and provide them with a bag for a blood transfusion. This game calls upon students’ knowledge of blood groups and transfusions.</p>	Computer or computers with Internet access	LO 1 LO 2 LO 3
Review	5 min	<p>Step 1: Go through the Lesson 7.5 exercise in the textbook aloud.</p> <p>Step 2: When they are finished, have Review Exercises for Chapter 7.</p>	Textbook – Lesson 7.5 exercises Textbook – Chapter 7 Review Exercises	LO 1 LO 2 LO 3
Homework Assignment		<ul style="list-style-type: none"> • Finish Chapter 7 Review Exercises • Review the Word Analysis and Definition Tables in all Chapter 7 lessons. 		

Instructor Lesson Plan: Chapter 7, Lesson 7.5

Lesson 7.5 Masters

Lesson 7.5 Pie Chart Handout

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Lesson 7.5 – Blood Groups and Transfusions

Directions:

- (1) Read the statistics below.
- (2) Using the pie chart below, graph the frequency of each blood type in your class. Use a ruler or straight edge to help you be as precise as possible. Color the different areas of the pie chart to help the proportions stand out visually.

Average Blood Types and Rh Values

Blood Type	Rh Type	Percent of Population
A	+	34%
	-	6%
B	+	9%
	-	2%
AB	+	3%
	-	1%
O	+	38%
	-	7%

